## GLOSSARY

ACCESS TIME: A time interval which is characteristic of a storage device, and is essentially a measure of the time required to communicate with that device.

ACCUMULATOR: A storage device in the arithmetic unit where the results of arithmetic operations are produced.

ACCURACY: The quality of freedom from mistake or error, that is, of conformity or truth to a rule.

ADDRESS (noun): An expression, usually numerical, which designates a particular location in a storage or memory device or other source or designation of information.

ANALOG COMPUTER: A calculating device which operates on numbers represented by measurable physical quantities such as the rotation of a shaft, the amount of a voltage, the size of a displacement, etc.

ARITHMETIC UNIT: That component of a data processing system which contains the circuits for performing arithmetic operations.

ASSEMBLY PROGRAM: A computer program which takes sequential instructions written by the programmer in a non-machine language and changes them to codes or language used by the machine on which the program is to be run.

AUTOMATIC PROGRAMMING SYSTEM: A method of computer programming whereby the computer itself is used to convert a program written in a non-machine language by the programmer into the language understood by the computer.

BINARY NUMBER SYSTEM: A number system using the base two, as opposed to the decimal number system which uses the base ten.

BLOCK DIAGRAM: A graphic representation of the logical sequence of procedural steps by which data is processed.

BUFFER: A storage device used to compensate for a difference in rate of flow of information or in time of occurrence of events when transmitting information from one device to another, as from an input device to the High-Speed Memory, or from the High-Speed Memory to an output device.

CENTRAL PROCESSING UNIT (CPU): That group of components of the data processing system which contains the arithmetic, logical and control circuits for the basic system. In some systems it may also include the storage unit and the operator's console.

CHARACTER: One of a set of elementary symbols which may be arranged in ordered aggregates to express information.

CONSOLE: That component of a data processing system which provides facilities for manual control and observation of the system's operation.

CONTROL UNIT: That component of a data processing system containing the circuits and devices which govern the overall operation of the system or some portion of the system.

DIGITAL COMPUTER: A calculating device which processes numbers represented as discrete quantities.

EDITING: Checking cards for accuracy of punching, counting, or sorting according to a specific pattern.

FIELD: A column or group of columns in an IBM card allocated for punching specific information.

FIXED WORD LENGTH: Pertaining to a storage device in which the capacity for digits or characters in each unit of data is of a fixed length as opposed to a variable length.

FLOW CHART: A graphic representation of the flow of data and information in a data processing procedure.

HARDWARE: A colloquialism applied to the mechanical, electrical and electronic features of a data processing system. It is most frequently used to differentiate between the physical features of the system and those which the user introduces through coding or programming systems.

INPUT: (1) Information transferred into the computer. (2) The device by means of which information is fed into the computer.

INSTRUCTION: A set of characters which, when interpreted by the control unit, causes a data processing system to perform one of its operations. An instruction normally consists of a command and one or more addresses.

MAGNETIC DRUM: A rotating cylinder, the surface of which is coated with a material on which information may be reco... as small magnetic spots representing binary information.

MAGNETIC TAPE: A long ribbon-like strip of plastic material which is coated with a metallic substance and is capable of storing data recorded in the form of magnetized spots.

MARK SENSING: Punching information marked on IBM cards with an ELECTROGRAPHIC pencil.

MASTER CARD: The first card of a group containing fixed or indicative information for that group (for example, gangpunch master card).

MERGING: Combining two files, already in sequence, into a single file.

MICROSECOND: One millionth of a second.

MILLISECOND: One thousandth of a second.

PROGRAM (noun): A sequence of instructions which cause a data processing system to process a specific application.

RANDOM ACCESS: Access to storage under conditions in which the next position from which information is obtained, or to which it is delivered, is in no way dependent on the previous one.

RECORD: A group of related facts or fields of information which is treated as a unit.

SORTING: Arranging cards in a predetermined sequence according to the punching in the card.

WORD (in Electronic Computers): An ordered set of CHARACTERS comprising the normal unit in which information may be stored, transmitted, or operated upon in a fixed-word or fixed-variable-word computer.

## Briefing Outline and Schedule

## EDP Orientation

## (0900 - 1200)

| Date/Time and Duration | Topic | Speaker |
|---|---|---|

**Tuesday, 10 Sept. 1963**

I. **INTRODUCTION**

0900 - 10 mins      MOVIE--The Information Machine      STATINTL

         A.   History and ADP Development

             1.   Early methods
             2.   Abacus
             3.   Cash registers
             4.   Desk calculators
             5.   Punch cards
             6.   Computers

       15 mins      BREAK

1010 - 60 mins      MOVIE--The Thinking Machine

                                                             STATINTL

       15 mins      BREAK

1120 - 40 mins      B.   Computers

             1.   Definition
             2.   Physical description
             3.   Basic terminology

                 a.   peripheral machines
                 b.   programming
                 c.   etc.

         C.   Basic Uses--General Principle of Application

             1.   Uses applicable to computers
             2.   Uses not applicable to computers

         D.   Introduction to Hypothetical Problem

     II.   **MAJOR COMPONENTS OF A COMPUTER** (to be described with reference to hypothetical problem)

**Thursday, 12 Sept. 1963**

0900 - 16 mins        MOVIE--Introduction to Digital Computer
                                   Techniques       STATINTL

0916 - 25 mins        A.   Control

                       B.   Memory

                            1.   Drum
                            2.   Core
                            3.   Disc--magnetic and glass

0941 - 14 mins        MOVIE--Binary Numbers

0955 - 25 mins        C.   Processing

                            1.   Operation
                            2.   Number systems

          15 mins        BREAK                                   STATINT

1035 - 40 mins        D.   Input-Output

                            1.   Cards
                            2.   Paper tape
                            3.   Magnetic tape
                            4.   Commo devices
                            5.   CRT
                            6.   Plotters
                            7.   Printers

          15 mins        BREAK

1130 - 30 mins        MOVIE--Computer Units

**Tuesday, 17 Sept. 1963**

                   III.   FIELD TRIP--3 hours

**Thursday, 19 Sept. 1963**                             STATINTL

                   IV.   PREPARATION OF A PROBLEM FOR A
                          COMPUTER

0900 - 55 mins

                       A.   Defining the Problem (use or
                          emphasize given hypothetical problem)

                       B.   Flow Diagramming

                          1.   Getting up in the morning
                          2.   Hypothetical problem

| | | |
|---|---|---|
| 15 mins | BREAK | STATINTL |

1010 - 60 mins    C.  Programming

        1.  Machine language
        2.  Assembly language
        3.  Compilers

            a.  FORTRAN
            b.  COBOL
            c.  NELIAC

        D.  Debugging

15 mins    BREAK

1125 - 35 mins    MOVIE--Computer Programming

**Tuesday, 24 Sept. 1963**

0900 - 16 mins    MOVIE--By the Numbers

0916 - 60 mins    V.  PHOTO AND GRAPHICS RETRIEVAL

     15 mins    BREAK    STATINTL

1031 - 35 mins    VI.  DOCUMENT RETRIEVAL

        A.  Media for Storage of Documents

            1.  Hard copy
            2.  Microfilm reel
            3.  Aperture card
            4.  Minicard magnavue
            5.  Advanced, high-ratio reduction

15 mins    BREAK

1121 - 40 mins    B.  Devices for Storage of Documents

            1.  File cabinet
            2.  Rotary tub
            3.  Lodestar
            4.  Walnut device

STATINTL

Thursday, 26 Sept. 1963

VII.  INFORMATION RETRIEVAL

0900 - 60 mins

A.  Indexing (How information is stored)

B.  Location

1.  Searches
2.  Correlations
3.  Collations
4.  Text scan

C.  Resulting Documents

1.  Plots
2.  Graphs
3.  Charts
4.  Printed listings

STATINTL

15 mins          BREAK

1015 - 45 mins          QUESTION AND ANSWER PERIOD

1100 - 15 mins          WRAP-UP

15 mins          BREAK

1130 - 30 mins          CRITIQUE

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| 3 | A/DDS&T | 9/26 | D |
| 4 | | | |
| 5 | | | |
| 6 | | | |

| ACTION | | DIRECT REPLY | | PREPARE REPLY |
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| APPROVAL | | DISPATCH | | RECOMMENDATION |
| COMMENT | | FILE | | RETURN |
| CONCURRENCE | X | INFORMATION | | SIGNATURE |

Remarks:

Bud:

I wanted you to know that we are a major contributor to NPIC's training school for new PIs.

This is the schedule for the second in a series of orientation classes given by ▮▮▮▮▮▮▮

STATINTL

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1 APR 55       which may be used.          U. S. GOVERNMENT PRINTING OFFICE : 1955—O—342531